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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,052	08/26/2003	Ruxandra Baurceanu	ANL 273	2952

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JAMES J. HILL
EMRICH & DITHMAR, LLC
125 SOUTH WACKER DRIVE, SUITE 2080
CHICAGO, IL 60606-4401

EXAMINER	
COOKE, COLLEEN P	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,052	BAURCEANU ET AL.	
	Examiner	Art Unit	
	Colleen P. Cooke	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitations "the substrate", "the stabilizing layer", and "the sheath" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 is unclear as it recites that the Cu-containing superconductor is a member of "one or more" of different superconducting material families. It is unclear how the superconductor could be a member of more than one of the families listed.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6-8, 10-12, and 14-20 are rejected under 35 U.S.C. 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Onabe et al. (US 2003/0134749).

Onabe et al. teaches (see Figure 1) a superconducting layer (b) formed on a Cu diffusion layer (c) which is Cu diffused into Ag to produce an Ag layer with a small amount of Cu and also an Ag stabilizer (a) and an additional base portion of Ag (38). Onabe et al. teaches that the superconducting material may be one of a few types, including YBCO, BSCCO, and TBCCO (page 7, paragraph 0080). The diffusion layer (c) inherently would serve as a substrate for YBCO deposition and also as a stabilizer layer itself. Onabe et al. further teaches that the amount of Cu in the diffusion layer is from 50 $\mu g/cm^2$ to 300 $\mu g/cm^2$ (page 3, paragraph 0027).

If the teachings of Onabe et al. do not meet or encompass the claimed percent, it would be obvious to one of ordinary skill in the art at the time the invention was made to choose a percent in the applicant's claimed range, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to choose a percent Cu by the reasoned explanation that as Onabe et al. teaches, too much Cu may result in the undesirable formation of CuO and other oxides, while too little Cu is not sufficient to suppress the Cu migration from the oxide superconducting layer which may result in deterioration of the superconducting characteristics (page 3, paragraph 0027; for more teachings related to Cu

migration and its negative effects, see the teachings on page 2 in paragraphs 0014, 0016, and 0019).

With respect to claim 20, it appears that the instantly claimed product by process is the same as that which is claimed (a Cu-containing superconducting layer directly in contact with a Ag layer containing Cu). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*. 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onabe et al. (US 2003/0134749) as applied to claim 1 above, and further in view of Balchandran et al. (6579360).

Onabe et al. teaches the layered superconductor as described with respect to calim 1 above. Onabe et al. teaches that several different Cu-containing superconductors may be used, including YBCO, BSCCO, TBCCO (page 7, paragraph 0080). Onabe et al. does not specifically teach that an Hg-based superconductor, such as HBSCCO, may be used.

Balachandran et al. teaches a layered superconductor where the superconducting material may be from the YBCO family, BSCCO family, TBSCCO family, or HBSCCO family (Column 4, lines 20-32). It would have been obvious to modify the superconducting material by using another material such as HBSCCO because this material is demonstrated in the art to be similarly used.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onabe et al. (US 2003/0134749) as applied to claim 1 above, and further in view of Hahakura et al. (5929000).

Onabe et al. teaches the layered superconductor as described with respect to claim 1 above. Onabe et al. teaches a superconducting tape, and therefore does not teach a wire where the Ag layer takes the form of a sheath.

Hahakura et al. teaches a superconducting wire wherein BSCCO superconducting filaments (1) are in a stabilizing matrix (3) in the form of a sheath which is made of Ag or an Ag alloy (Column 6, lines 40-41).

It would have been obvious to modify the teachings of Onabe et al. by using the Ag material into which Cu is diffused as a sheath in contact with the Cu-containing superconductor instead of a flat layer or substrate because as Onabe et al. teaches, the diffused Cu is to deter or prevent the migration of Cu from the superconductor which would be equally a problem in either physical form and further because as Hahakura et al. teaches, these materials are known to be used in this form.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onabe et al. (US 2003/0134749) as applied to claim 1 above.

Onabe et al. teaches the layered superconductor as described with respect to claim 1 above (see Figure 1). Onabe et al. teaches that an Ag layer into which Cu is diffused is used only below the superconducting layer (i.e. on one side, as layer c) and not as the material for the stabilizer layer (a). Although Onabe et al. teaches that the stabilizer layer (a), which is deirectly above the superconducting layer, is made of Ag, it would have been obvious to make the

stabilizer layer (a) out of the same Ag into which Cu is diffused (as in c) because as Onabe et al. teaches, Cu from the superconductor material will diffuse into an Ag layer which may result in deterioration of the superconducting characteristics (see page 2, paragraphs 0014, 0016, and 0019). This Cu migration from the superconductor into Ag will occur with any Ag in contact with the superconductor, regardless of which side of the superconductor the Ag contacts (i.e. whether the Ag is above or below the superconductor). Thus, as it would be obvious that Cu would migrate from the superconductor into the stabilizer layer (a), it would then be obvious to add enough Cu to the stabilizer layer to reduce or prevent the Cu from migrating (see also page 3, paragraph 0027).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colleen P Cooke whose telephone number is 571-272-1170. She can normally be reached Mon.-Thurs. 8am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Stan Silverman can be reached at 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Colleen P. Cooke 4/28/05

Colleen P Cooke
Primary Examiner
Art Unit 1754